MATH

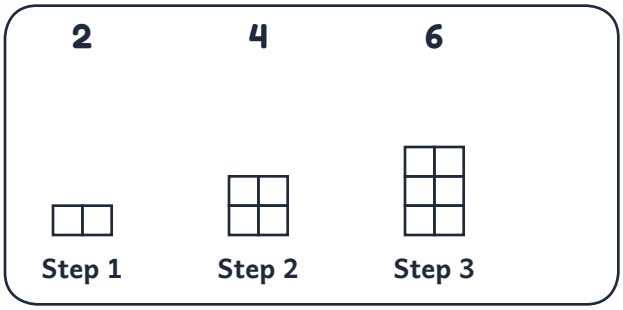
Growing patterns

Name _____ Date _____

I can draw the next step of a growing pattern and count it.

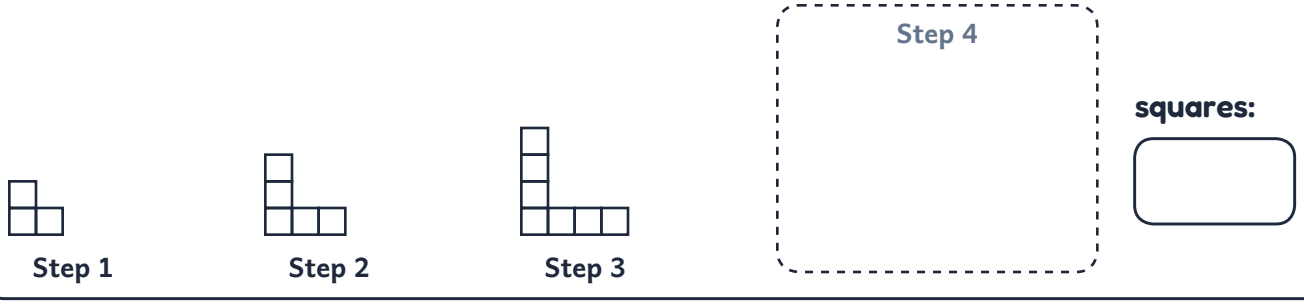
1 How it works

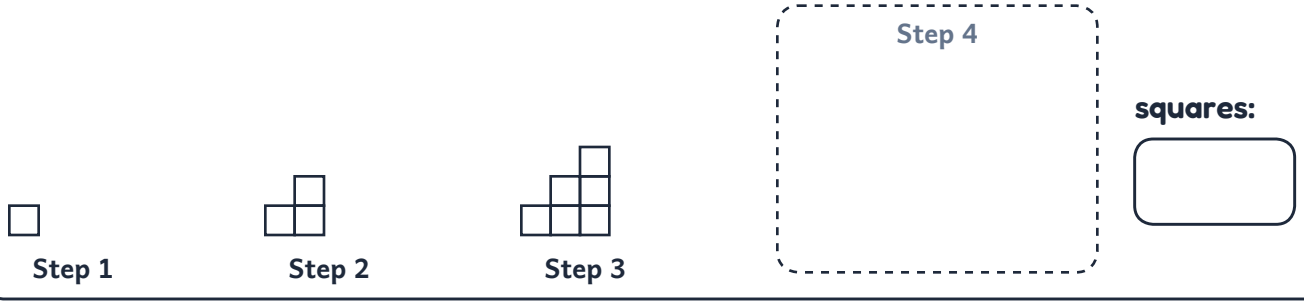
In a growing pattern each step gets bigger. A tower pattern has 2 squares in step 1, 4 in step 2 and 6 in step 3. It adds 2 squares each time, so step 4 has 8. Look at what is added to find the next step.



2 Draw step 4. How many squares?

Look at what changes from step to step.





How did I do? ☆ ☆ ☆

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Complete the tables

Name _____ Date _____

I can show a growing pattern in a table.

1 Count, then keep the pattern going

Draw on scrap paper if it helps.



Step 1 and step 2

Step	1	2	3	4	5	6
Squares	2	3				

What is the rule? _____



Step 1 and step 2

Step	1	2	3	4	5	6
Squares	1	3				

What is the rule? _____



Step 1 and step 2

Step	1	2	3	4	5	6
Squares	2	4				

What is the rule? _____

How did I do? ☆ ☆ ☆

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Think deeper

Name _____ Date _____

I can explain and predict a pattern.

1 Predict without drawing

Use the rule, not a picture.



Step 1: 3 Step 2: 5 Step 3: 7

Step 10 has ☐ squares.



Step 1: 2 Step 2: 4 Step 3: 6

Step 10 has ☐ squares.



Step 1: 2 Step 2: 3 Step 3: 4

Step 10 has ☐ squares.

2 Think about it

1. How many more squares does each step of the row pattern add? ☐
2. Can a step of the tower pattern have 15 squares? ☐
3. Which grows faster, the L or the plus? ☐

How did I do? ☆ ☆ ☆

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Word problems

Name _____ Date _____

I can use a pattern to solve a problem.

1 Read, find the pattern, solve

Make a table or draw if it helps.

1 Ben adds 2 blocks to a tower each day. On day 1 it has 2 blocks. How many on day 5?

Answer: _____

2 A garden has 1 flower in row 1, 2 in row 2, 3 in row 3 and 4 in row 4. How many flowers in all?

Answer: _____

3 Step 1 has 3 squares, step 2 has 5, step 3 has 7. How many squares in step 4?

Answer: _____

4 Aisha lays a path of tiles. Each step adds 4 tiles. Step 1 has 4 tiles. Which step has 20 tiles?

Answer: _____

How did I do? ☆ ☆ ☆

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FOR TEACHERS AND PARENTS

Answer key: growing patterns

1 Page 1

Step 4: 1) 9 squares; 2) 10 squares.

2 Page 2

1) 4, 5, 6, 7 (add 1 each step)
2) 6, 10, 15, 21 (add 1 more each time: +3, +4, +5)
3) 6, 8, 10, 12 (add 2 each step)

3 Page 3

Step 10: 1) 21 squares; 2) 20 squares; 3) 11 squares.
Think: 1) 1 more; 2) No: tower steps are always even; 3) The plus: it adds 4 each step.

4 Page 4: word problems

1) 10 blocks
2) 1 + 2 + 3 + 4 = 10 flowers
3) 9 squares (add 2 each time)
4) step 5

5 Teaching tip

Build the first three steps with blocks. Ask "what do I add to get the next one?" before children draw. The rule is easier to see in blocks than on paper.

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